

REMARKS

I. Status of the Claims and the Rejections

The Office Action Summary correctly indicates that claims 1-10 are pending in this Application, and also indicates that all claims are rejected. Nonetheless, the Office Action Summary does not indicate whether the drawings filed with the Application are accepted by the USPTO. Applicants respectfully request an indication from the Examiner that the drawings are acceptable, or in the alternative, an indication as to any specific objections that may exist with respect to the current drawings, so that Applicants may have an adequate opportunity to address any such objections.

Substantively, claims 1, 2, 4, and 6-10 were rejected under 35 U.S.C. § 102 as being anticipated by Drew U.S. Patent No. 5,511,385 ("Drew"). Claim 3 was rejected under 35 U.S.C. § 103 as being obvious over Drew in view of Fischer U.S. Patent No. 5,545,084 ("Fischer"). Claim 5 was rejected under 35 U.S.C. § 103 as being obvious over Drew in view of Buchholz U.S. Patent Application Publication No. 2001/0032472 ("Buchholz"). Applicants respectfully traverse these rejections. Nevertheless, Applicants have amended claims 1-10 and have added new dependent claims 11 and 12.

Additionally, the Office Action included objections to the specification and the abstract. Applicants have amended the specification to include section headings and remove typographical errors, as suggested by Examiner. Applicants have also amended the abstract to remove the title paragraph and so-called legal terminology, as well as to reduce the number of words to fewer than 150. Consequently, Applicants respectfully request that the objections to the specification and the abstract now be withdrawn.

II. Rejections of the Claims under 35 U.S.C. § 112

Claims 1-10 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants have amended claims 1-10 in accordance with the suggestions in the Office Action, including the removal of indefinite terminology and adding proper antecedent basis for all claim elements. Additionally, Applicants have fixed typographical errors and removed the parenthetical references in the claims to further clarify the claim language. No new matter has been added to the claims in these amendments.

For at least these reasons, Applicants respectfully assert that claims 1-10 meet the requirements of Section 112, second paragraph. Therefore, Applicants respectfully request that these rejections of claims 1-10 be withdrawn.

III. Claims 1, 2, 4, and 6-10 are Novel

A. The Claims

Claims 1 and 9 are independent claims. Claim 1 recites a device for regulating the temperature of individual sections of the interior of an aircraft, the device including "a controlled mixer valve for the mixing of engine bleed air with air cooler than the engine bleed air in order to obtain pre-tempered mixed air flowing out of the mixer valve." The device further includes "individual heating units assigned to respective individual sections and adapted to heat the pre-tempered mixed air flowing in the respective supply lines" and a regulator unit "which controls the mixer valve...such that the pre-tempered mixed air is of a temperature which corresponds to the lowest of the nominal temperatures of all the individual sections." Each of claims 2, 4, and 6-8 depends from independent claim 1 and recites additional features.

Similarly, claim 9 recites a process for regulating the temperature of individual sections of the interior of an aircraft, including "mixing engine bleed air with air which is cooler than the engine bleed air in order to obtain pre-tempered mixed air at a temperature which corresponds to the lowest of the identified nominal temperatures" and "post-tempering the mixed air distributed to the individual sections" by heating the mixed air. Claim 10 depends from independent claim 9 and recites additional features of the claimed process.

B. The Deficiencies of the Cited Prior Art

Drew is directed to an independent compartment temperature control device that can provide conditioned air to multiple compartments. As shown in Figure 1, Drew discloses a pair of refrigeration packs (104, 108) operatively coupled to respective engines (128, 132) and respective portions (144, 148) of the aircraft compartment. More specifically, hot engine bleed air is provided to each refrigeration pack (104, 108) through valves (240). The hot engine bleed air is then circulated through a pair of heat exchangers (272, 252) to cool the bleed air, the cooled bleed air then mixed with recirculation air from the passenger portion (148) and recirculation lines (296, 312) as well as unconditioned hot bleed air from supply lines (228, 236). Thus, each refrigeration pack (104, 108) provides a mixture of bleed and recirculation air which is further cooled by a condensing heat exchanger (120) and then delivered back to the respective compartment portions (144, 148) via entrance ducts (292, 324) (Col. 5, lines 35-53).

Drew fails to disclose multiple elements of independent claim 1. The Office Action points to the valves (240) of Drew as the claimed "mixer valve." But claim 1 requires that the mixer valve mixes engine bleed air with air cooler than the engine bleed air, and further that the resultant pre-tempered mixed air flows out of the mixer valve. In contrast, the valves (240) in Drew only control how much hot bleed air from the engines (128, 132) will be allowed to enter the heat exchangers (252, 272) of the respective refrigeration packs (104, 108). The air

exiting the valves (240) is simply hot bleed air, not a mixture (Col. 4, lines 45-47). Drew therefore fails to teach the mixer valve as recited in the claims.

Furthermore, the Office Action cites the refrigeration packs (104, 108) of Drew as the claimed "heating units." Claim 1 requires that the heating units heat the pre-tempered mixed air. In contrast, the refrigeration packs (104, 108) operate to cool hot engine bleed air provided through multiple valves (240, 152). In other words, the refrigeration packs (104, 108) do not heat the input hot engine bleed air from valves (240), which the Office Action cites as the "pre-tempered mixed air." Instead, these refrigeration packs (104, 108) perform the opposite function. Thus, the refrigeration packs (104, 108) cannot be the heating units recited in the claims.

Additionally, the Office Action alleges that the temperature controller (248) controlling the amount of hot bleed air passing through valve (240) is the claimed "regulator unit." The regulator unit of claim 1 controls the mixer valve in such a way so that the pre-mixed tempered air leaving the valve (240) is at the lowest nominal temperature identified by the various transmitters. As noted above, the alleged pre-mixed tempered air is actually just hot bleed air leaving the valve (240), which must be cooled by the refrigeration packs (104, 108) to approach the nominal temperature recorded by the adjustable devices (344, 372) in the compartment portions (144, 148). The hot bleed air leaving the valve (240) clearly cannot be at the lowest nominal temperature recorded. Regardless of the temperature of the hot bleed air, the temperature controller (248) modifies the amount of hot bleed air delivered to the first refrigeration pack (104) based solely on the nominal and actual temperatures measured in the crew compartment (144), while the amount of hot bleed air delivered to the second refrigeration pack (108) is based solely on the nominal and actual temperatures measured in the passenger compartment (148) (Col. 6, lines 36-43; col. 7, lines 35-48). Each refrigeration pack (104, 108) operates completely independently and does not consider nominal temperatures in each of the

compartments (144, 148). Thus, Drew fails to disclose a regulator unit which controls the mixer valve to provide pre-tempered mixed air at the lowest nominal temperature recorded.

For at least these reasons, claim 1 is novel over Drew. Claims 2, 4, and 6-8 recite unique combinations of features also not disclosed in Drew, for at least the same reasons set forth above with respect to claim 1. Applicants respectfully request that the Section 102 rejection of claims 1, 2, 4, and 6-8 be withdrawn.

With respect to independent claim 9, Drew is also deficient. The Office Action states that Drew discloses mixing of engine bleed air and cool air to obtain pre-tempered mixed air at a temperature which corresponds to the lowest of the respective nominal temperatures recorded. As discussed above in relation to claim 1, the temperature controllers (248, 364) operate the respective refrigeration packs (104, 108) independently and thus cannot direct each refrigeration pack (104, 108) to obtain pre-tempered mixed air at the same lowest nominal temperature.

Moreover, claim 9 recites post-tempering of the mixed air by heating the mixed air. The Office Action alleges that Drew discloses post-tempering at col. 9, lines 35-53, but this passage in Drew only describes how the refrigeration packs (104, 108) operate when one of the refrigeration packs (108) has failed. In the described failure mode, Drew discloses that the operable refrigeration pack (104) provides cooled bleed air for mixing with recirculation air for both compartments (Col. 9, lines 48-53). Consequently, there is no post-tempering taught in Drew in either a normal mode or a failure mode.

For at least these reasons, Applicants respectfully assert that each of independent claims 9 and 10, which depends from claim 9 and recites a unique combination of features, is novel over Drew. Applicants respectfully request that the rejections of claims 9 and 10 be withdrawn.

Furthermore, Applicants respectfully assert that each of claims 1, 2, 4 and 6-10 is patentable over Drew because the Office Action fails to identify any objective reason for modifying Drew to achieve the subject matter recited in independent claims 1 and 9.

IV. Claims 3 and 5 are Not Obvious

A. The Claims

Each of claims 3 and 5 depends from independent claim 1 and recites additional features. More specifically, claim 3 further recites that the heating units are electric heating elements. Claim 5 requires that the air which is cooler than the engine bleed air and supplied to the mixer valve be delivered from a mixing chamber.

B. The Deficiencies of the Cited Prior Art

Fischer is directed to a method for conditioning two passenger decks of an aircraft, and is only relied on by the Office Action for the teaching of electric heating elements. Similarly, Buchholz is only relied upon by the Office Action for the teaching of a mixing chamber for delivering cooled air. Each of these rejections depends substantially upon the rejection of claim 1 under Drew, which is deficient for at least the reasons described above.

Neither Fischer nor Buchholz overcomes these deficiencies of Drew with respect to claim 1. Therefore, claims 3 and 5 are allowable over the cited references, for at least the same reasons. Applicants respectfully request that claims 3 and 5 be allowed.

V. New Claims 11 and 12 are Allowable

Applicants have added claims 11 and 12 in this response. Claim 11 depends on independent claim 9 and further recites "setting the nominal temperatures of the individual sections manually." Similarly, claim 12 depends in independent claim 1 and recites that the

nominal temperatures of the respective individual sections is set manually. These claims are fully supported in the original specification at paragraph [0039].

Each of claims 11 and 12 are allowable over Drew for at least the reasons described above with respect to independent claims 1 and 9. Applicants respectfully request allowance of claims 11 and 12 without delay.

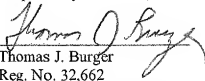
VI. Conclusion

Based on the amendments to the claims and these remarks, Applicants respectfully assert that all present claims are in condition for allowance, and respectfully request an allowance without further delay.

It is believed that no fee is due for this filing. If any fee is deemed due, consider this as an authorization to charge Deposit Account 23-3000 therefore.

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Date

Respectfully submitted,


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